

## **ABSTRACT**

A pyrometer for use in measuring temperatures in a furnace, has a lens-tube for supporting an optical head in a port of the furnace for viewing an interior of the furnace along a line of sight. The optical head converts infrared radiation to electrical signals. A photometer circuit connected to the optical head processes the electrical signals and a scaling circuit connected to the photometer circuit scales the electrical signals. An output circuit connected to the scaling circuit receives the scaled electrical signals and produces output signals for display or control of the furnace. A power supply connected to the scaling circuit powers the photometer, scaling and output circuits. Calibration in the scaling circuit scales the electrical signals to be most sensitive to a wavelength of middle infrared radiation to which at least one gas component in the furnace is semi-transparent, for measuring the temperature of the at least one gas component.